A retrospect of the speculations which have been set up and the views which have been expressed will allow much to appear as requiring to be confirmed by further observation. Nevertheless we should not under-estimate the difficulty of proof in the treatment of a question in which sometimes even but slight indications of old peculiarities must be of importance. This difficulty, however, will not be permitted to suppress the attempt at an elucidation. The circumstance that arguments may really be pointed out everywhere will allow this consideration of the case to appear admissible, while the fact that every attempt at an elucidation ought to be made will show that it is justifiable.

LXXIII.—*Report upon the Stomatopod Crustaceans obtained by P. W. Basset-Smith, Esq., Surgeon R.N., during the Cruise, in the Australian and China Seas, of H.M.S. 'Penguin,' Commander W. U. Moore.* By R. I. POCOCK, of the British (Nat. Hist.) Museum.

[Plate XX. B.]

DURING the past two years the Trustees of the British Museum have received from the Lords of the Admiralty an immense and very valuable series of Crustacea obtained by Mr. P. W. Basset-Smith, of H.M.S. 'Penguin,' in the Australian and China Seas.

The Stomatopoda alone of this series form the subject of the present communication; but it is probable that when the rest of the material is examined, the remainder of the orders will be found to be equally well represented by new and interesting forms.

I may add that, during a recent visit to the British Museum, Dr. H. J. Hansen, of Copenhagen, made a thorough revision of our extensive collection of Squillidæ. Amongst other important innovations, Dr. Hansen has suggested more than one new generic name for certain species that have been hitherto referred to previously existing genera; but until he has himself published the descriptions of these genera, I have not considered it advisable to adopt them.

(1) *Squilla fasciata*, De Haan.

Two specimens. Chusan (10–14 fath.); Holothuria Bank (34–36 fath.).

(2) *Squilla affinis*, Berthold.

Chusan (10–14 fath.); Kowlson Bay (Hong Kong), Holothuria Bank (China Sea) (38–52 fath.).

The specimens from Kowlson Bay and Holothuria Bank closely resemble the specimen named *gracilis* by Miers in the distribution of the patches of black pigment upon the segments of the abdomen and on the telson, as also in having the telson somewhat narrower than appears to be normally the case in *Sq. affinis*, and its spines longer. They resemble the typical form, however, in having only four or five spines on the raptorial limbs, and not six or seven, as in the example of *gracilis*. The specimens in question thus appear to be intermediate in characters between *gracilis* and *affinis*, from which we may conclude that the former can scarcely be permitted to rank as a distinct variety.

(3) *Pseudosquilla oculata* (Brullé).

A single example from Macclesfield Bank (China Sea).

(4) *Pseudosquilla ciliata* (Fabr.).

Three young examples from the Arafura Sea.

(5) *Gonodactylus chiragra* (Fabr.).

Baudin Island, Troughton Island, Damma Island, Baleine Bank (15–20 fath.), Amboina Bay, Arafura Sea, Macclesfield Bank (32 fath.).

A large number of specimens.

I doubtfully refer to this species a semi-larval form, measuring 9 millim. long, from Baleine Bank, which differs from the adult in having only a single median crest upon the telson.

(6) *Gonodactylus graphurus*, Miers.

N.W. Australia (20 fath.); Baudin Island (8–15 fath.); Baleine Bank, N.W. Australia (15–20 fath.); Arafura Sea; Holothuria Bank, China Sea (15–24 fath.).

A great number of examples.

The Squillidæ in the British Museum included by Mr. Miers under this head contained examples of genuine *graphurus* and others which have subsequently been made into a distinct species, *G. glaber* (erroneously spelt *glabrous*), by Brooks. Still later Dr. de Man has united the two again; but since the dorsal grooves characteristic of *graphurus* are well marked, without signs of failing, in all the adult specimens obtained by Mr. Bassett-Smith, it has not seemed to me advisable at present to adopt Dr. de Man's opinion.

In one semi-larval form (10 millim. in length) from Baleine Bank the groove is represented only upon the fifth abdominal tergite.

(7) *Gonodactylus Smithii*, sp. n. (Pl. XX. B. fig. 1.)
(? Var. of *G. chiragra*.)

Colour a deep green, obscurely mottled, the manus of the raptorial limb reddish purple, the distal extremity of the penultimate segment indigo-blue; a reddish-purple spot on the inner side of the distal extremity of the large segment of the appendage.

This species is closely allied to *G. chiragra*, from which it appears to differ in being more robust and in the ornamentation of the telson and of the sixth abdominal tergite. The crests upon these two plates are the same in number as in *chiragra*, but are much more compressed and carinate. Thus on the sixth abdominal tergite the crests are ridges, flat above and produced without constriction into long spines, which considerably overlap the hinder border of the tergite; in *chiragra* these crests are wider, convex above and rounded behind, the spines being very short and sharply defined from the rest of the crest. In the telson, again, the median prominence is a strongly compressed ridge, the upper edge of which is almost straight and the posterior angle is regularly produced into a long strong spine; all the other crests are similarly compressed and carinate; in *chiragra* the median crest is convex above, sometimes tipped with a small spine, rounded behind and scarcely compressed.

The following measurements (in millimetres) will show the stouter build of this new form:—Total length (from base of rostrum to notch of telson) 23·5; width of fifth and first abdominal somites and of carapace 4·5, of second free thoracic somite 4·3; length of carapace 6·3, of eye 2·8.

An example of *chiragra* measuring 23 millim. in length has the fifth abdominal somite and the carapace only 3·8 millim. wide, the latter plate being 5·6 millim. long and the eye-stalk 2·5. Again, an example of *chiragra* with the abdomen 4·5 millim. wide measures 27 millim. long, the carapace being 7 millim. long and the eye-stalk 2·8. A second example of *Smithii* measuring only 17 millim. long shows corresponding differences when compared with an example of *chiragra* of the same length. These comparisons show that, in addition to being stouter in body, the eyes are longer in *Smithii*.

Two examples (♂ ♀) from the Arafura Sea, both possibly young.

A number of young examples of *chiragra*, both surpassing and falling short of these in size, were taken at the same time and in the same locality, and there is no difficulty whatever in distinguishing those that are here named *Smithii*. Dr. Hansen, however, when naming the Museum collection of Stomatopoda referred an exactly similar form to *G. chiragra*, so that it is possible that the view here expressed may be erroneous.

(8) *Gonodactylus excavatus*, Miers.

A single male example dredged at a depth of 26 fath. on Macclesfield Bank.

The rediscovery of this species is interesting, the locality of the type being unknown. The figure of the telson of this species given on pl. iii. of Mr. Miers's paper is very inaccurate. The excavation is represented as much wider than it really is, and the posterior angles of the telson appear to be single, whereas in reality they are double, consisting of two subequal processes.

(9) *Gonodactylus trispinosus*, Dana.

Two small examples from Baleine Bank (N.W. Australia).

Under this species, in his revision of the Squillidæ, Mr. Miers mentions two males that were obtained at Sharks Bay (W. Australia). According to Dr. Hansen, these examples belong to a different species, namely *G. stoliura* of F. Müller.

(10) *Gonodactylus tuberosus*, sp. n. (Pl. XX. B. fig. 2.)
(? Var. of *trispinosus*.)

Very closely allied to the preceding, *G. trispinosus*, the only differences between the two that I have noticed being found in the form of the rostrum and of the telson. In *trispinosus* the lateral spines of the rostrum are longer, thinner, and are directed forwards and outwards, so that if prolonged in the same direction they would pass along the outer border of the eyes. In *tuberosus*, on the other hand, the spines are much shorter and stouter, being directed forwards, so that the prolongation of their axes would pass through the external half of the eyes. Again the telson of *tuberosus* is more squared and its posterior angles less rounded; the prominences, too, are considerably larger, the median being almost spherical and so high that its summit is on a level with the summits of the median tubercles of the sixth abdominal tergite, although these tubercles are themselves considerably more elevated than in *trispinosus*; moreover, the lateral tubercles of the telson are also much less elongate and more spherical; the notches separating the lobes of the telson are wider than in *trispinosus*, the external notch being particularly well-marked and widening towards the margin of the plate.

Measurements in millimetres of largest specimen:—Length from apex of eyes to end of telson 40; length of eye 3·3, width of cornea 2; length of telson 7·5, width 8·2.

Two examples from Macclesfield Bank, at a depth of 37 fath.

(11) *Gonodactylus Hansenii*, sp. n. (Pl. XX. B. fig. 3.)

Belonging to the same group as *G. Edwardsii, scyllarus, cultrifer*, &c.

Colour (in alcohol) a uniform yellowish pink, with a black patch of colour on the second segment of the external ramus of the swimmeret.

Eyes very large and globular, at least as large as in *G. Edwardsii.* The dorsal plate of the ophthalmic somite deeply bifid in front. *Antennal scales* about the same relative size as in *G. scyllarus*, being considerably shorter than the carapace.

Rostrum with evenly convex anterior border and evenly rounded angles.

Manus of the raptorial limbs moderately dilated at the base and armed with nine distinct, sharp, subequal teeth. The margins of the three posterior thoracic tergites narrowed and not dilated even as in *G. scyllarus*.

The margins of the abdominal somites thickened as in *G. scyllarus*, the posterior angles spined as in that species. The sixth abdominal tergite and telson closely resembling these plates in *G. scyllarus*, the median being elevated, carinate, and posteriorly spined as in that species; the crests on each side of the median one not so close to it as in *scyllarus*, and not divided by a groove; the median crest not continuous with the crest upon the internal spiniferous process, while the external crest, which in *scyllarus* lies close to the external edge of the anterior half of the telson, is situated more internally, being in the same line as the external edge of the median process on each side.

The movable spines on the exopodite of the swimmeret are longer than in *scyllarus*, the apex of the distal one being on a level with the margin of the distal segment of this appendage; moreover the crests upon the endopodite of the swimmerets are unequal in size, the exterior being considerably longer and stronger than the interior; in *scyllarus* they are subequal.

Measurements in millimetres:—Length (from anterior margin of rostrum to the median notch of telson) 60; length of carapace at the side 14, of antennal scale 11; width of rostrum 4, length 2; length of eye and width of cornea 4; width of telson 10, length from anterior end of median keel to median notch 8.

A single female example from Macclesfield Bank, 35 fath.

On the whole this species seems to come nearest to *G. scyllarus*. It differs, however, in the arrangement of the crests of the telson, the size of the eyes, the form of the rostrum, the bifid ophthalmic tergite, and the number of teeth on the raptorial limbs. In having large eyes and many teeth on the raptorial limbs it resembles *G. Edwardsii*, Berth., but differs in the structure of the telson, the small antennal scales, form of rostrum, &c.

(12) *Gonodactylus carinifer*, sp. n. (Pl. XX. B. fig. 4.)

Belonging to the same section as the preceding, *G. Hansenii*, but closely related to *G. cultrifer*.

Colour (in alcohol) a uniform ochraceous tint, the dorsal surface marked everywhere with fine, close-set, irregular star-shaped patches of pigment.

Eyes very large and globular. The dorsal plate of the ophthalmic somite with its antero-lateral margins directed upwards.

Rostrum ovately convex, its extremity bent downwards. Antennal scale rather large, a little shorter than the carapace measured along the dorsal middle line. The manus of the raptorial limb moderately dilated and armed with *three* distinct sharp subequal teeth. The margins of the free cephalothoracic tergites not dilated; the posterior angles of the posterior abdominal tergites spinous. The sixth abdominal tergite furnished with six posteriorly spined crests.

The telson almost exactly like that of *G. cultrifer* (White), except that the median crest is much lower, being only about half as high as it is long, with its upper edge only lightly convex, and that there is no trace of a crest near the external margin of the anterior half of the telson.

Measurements in millimetres:—Length from anterior edge of rostrum to median notch of telson 27, of carapace at the side 7, of antennal scale 5·6; length of eye 3, width of cornea 2·8; width of telson 5, length from median notch to anterior edge of median keel 3·8.

A single male example from Holothuria Bank (China Sea), 24 fath.

Judging by its size the example here described is young, and it is necessary to bear in mind that it may prove to be the young of *G. cultrifer.* Since, however, it appears to have all the characters of an adult, I have decided, at all events provisionally, to regard it as a distinct form. It may be at once recognized from *G. cultrifer* by the presence of *three*, and not two, teeth on the hand of the raptorial limb, and by the lowness of the median crest of the telson.

EXPLANATION OF PLATE XX. B.

Fig. 1. *Gonodactylus Smithii*, sp. n.; last abdominal tergite and telson from above, × 2. 1 *a.* Ditto, ditto, from the side, × 2.

Fig. 2. *Gonodactylus tuberosus*, sp. n.; last abdominal tergite and telson from above, × $\frac{3}{2}$. 2 *a.* Ditto, ditto, from the side, × $\frac{3}{2}$. 2 *b.* Ditto, rostrum.

Fig. 3. *Gonodactylus Hansenii*, sp. n.: anterior end of body. 3 *a.* Ditto, last abdominal tergite and telson, from above, × 2. 3 *b.* Ditto, ditto, from the side.

Fig. 4. *Gonodactylus carinifer*, sp. n.; anterior end of body. 4 *a.* Ditto, last abdominal tergite and telson, from above. 4 *b.* Ditto, ditto, from the side; nat. size.

BIBLIOGRAPHICAL NOTICE.

Éléments de Paléontologie. Par Félix Bernard &c. Première Partie (pages 1 à 528), avec 266 figures dans le Texte. 8vo. Baillière, Paris, 1893.

Palæontology is here treated in a very full and masterly manner. The object and history of the Science are first noticed. Its relationship to Biology and Geology is clearly defined, and the necessity of a knowledge of these, as collateral studies, is insisted on. Its history extends from the ancient recognition of fossil shells having once been marine, to the systems of modern philosophy, comprehending far-advanced theories of natural history in its many branches, and the now-established doctrine of Evolution. Chapter II. deals with the definition of "Species," gradations of varieties, and transitional forms; also how far natural selection and the influence of locality and requirements have had effect. Correlation of structure and rudimentary organs are considered; and parallelism and convergence among forms, also aberrant and synthetic types, are carefully exemplified. How far there may be a vital force in species and in larger groups, and whether the perfection of races and individuals may be looked for, are among the problems still waiting for elucidation by the study of facts. In Chapters III. and IV. the Author defines natural classification and phylogeny, referring to the help of comparative anatomy in the study of the evolution of organs, and the unity of plan. The importance of Embryogeny in these researches is shown; and a recognition of the geological continuity of beings is indispensable. This leads to the consideration of successive faunas and floras through geological times; and how they may have been influenced by locality and by changes in marine and freshwater conditions: also by variations of climate. Chapters V. and VI., after explaining why and how organic beings have become fossilized, give a classification of the known strata and the general palæontological characters of their greater divisions.

The Author clearly shows how Biology cannot be mastered if the study of Fossils be omitted, since both the living and the extinct forms come under the law of evolution in a not yet fully understood complex, of which some constituent lines have been traced, whilst numerous coils and networks have yet to be unravelled. Leaving much of the technical work of a palæontologist in the field and the laboratory to be learnt from other instructors, M. Bernard proceeds to elaborate the special object of this portion of his work, namely Animal Palæontology, in a most orderly and painstaking manner, and with numerous satisfactory figures in the text, all clear and definite, and almost, if not quite, all newly drawn from good sources. The Author has evidently endeavoured to master the details of each group, but still caution must be taken in following him in every case. We unfortunately opened the book at page 325, where a few mistakes at once appear—thus *Edwardsi* is misprinted "*Edward*;" the figure of the *Palæocypris* is an inferior and reversed copy of the original, with some inaccuracies in the letters of reference to parts; fig. 156, E, is not Barrande's *Bolbozoe*; and the diagnosis of M'Coy's *Beyrichia* is incorrect. Without further fault-finding we wish to recommend this work as evidently the result of good honest work by a palæontologist possessed of many, but not necessarily of all, of the special qualifications wanted in so very wide a field of research.

The Protozoa occupy pages 77–107, and comprise the Foraminifera and Radiolaria. The Spongiaria occupy pages 107–130, the Cœlenterata pages 130–194, the Echinodermata pages 195–322, and the Arthropoda pages 323–397; the Nemathelmintha are mentioned at page 397; the Vermes Ciliati comprise the Bryozoa (pages 398–401), Brachiopoda (pages 401–440), and Chætopoda (pages 440–442); the Mollusca partly—thus Amphineura (page 444), Gasteropoda (pages 445–524), and a few pages (524–528) making a commencement of the Lamellibranchiata. The foregoing and other names of the groups are given in French, not Latin. The relative attention given to each is approximately represented by the number of pages indicated above.

The bibliographic references throughout are numerous and useful, and valuable classificatory and other tables are to be found in their right places. With the Second Part of the work doubtless a good Index and full Table of Contents will be given, and these will be very useful.

PROCEEDINGS OF LEARNED SOCIETIES.

GEOLOGICAL SOCIETY.

February 8, 1893.—W. H. Hudleston, Esq., M.A., F.R.S., President, in the Chair.

The following communication was read:—

"Note on a Radiolarian Rock from Fanny Bay, Port Darwin, Australia." By G. J. Hinde, Ph.D., V.P.G.S.

A specimen brought from Fanny Bay by Captain Moore, of H.M S. 'Penguin,' is of a dull white or yellowish tint, in places stained red. It has an earthy aspect, and is somewhat harder than chalk, but gives no action with hydrochloric acid. Microscopic sections show a fairly transparent groundmass, apparently amorphous silica, containing granules and subangular fragments up to ·075 millim. in diameter, some of which appear to be quartz.

Besides this, the rock contains numerous radiolaria, and it is really a radiolarian earth intermediate in character between the Barbados earth and such cherts as those of the Ordovician strata of Southern Scotland.

The details of the extent of the deposit and its relationship to other rocks of the area are not yet obtainable, though it is possible that a considerable thickness of rock mentioned by Mr. Tenison Woods as occurring in this area may also be of radiolarian origin.

The Author describes a species of *Cenellipsis*, two of *Astrophacus*, one of *Lithocyclia* (new), one of *Amphibrachium*, three of *Spongodiscus* (one new), four of *Spongolena* (all new), two of *Dictyomitra* (both new), one of *Lithocampe* (new), and two of *Stichocapsa* (both new).

From these it is not practicable at present to determine the geological horizon of the rock; with one exception, all the genera represented occur from Palæozoic times to the present.

MISCELLANEOUS.

Notes on Chœropsis liberiensis (*Morton*).

By Henry C. Chapman, M.D.

It is well known that the late Dr. Samuel G. Morton, regarding certain peculiarities presented by the skull of the hippopotamus inhabiting the west coast of Africa as specific in character, proposed, in communications made to the Academy *, that the latter should be distinguished from that of the east coast as *Hippopotamus minor*, afterwards *liberiensis*, the former retaining the name of *Hippopotamus amphibius* given to it by Linnæus †. The Academy having afterward acquired an entire skeleton of the Liberian hippopotamus, the late Dr. Leidy took up anew the study of its osteology, and more especially of the skull. After a most careful comparison of the skulls of the two species Dr. Leidy came to the conclusion that the hippopotamus of Liberia differed so much from that inhabiting the Nile, the Cape of Good Hope, &c., that the Liberian animal should be considered as constituting not only a distinct species, but a distinct genus, and proposed[*] that the new genus should be named *Chœrodes*. Learning, however, that this name had already been appropriated, having been previously given to an insect, Dr. Leidy suggested that the name *Chœrodes* should be changed to *Chœropsis*[†]. While Dr. Leidy's views as to the generic distinction between *Hippopotamus* and *Chœropsis* have been accepted by such high authorities as Gratiolet[‡], Milne-Edwards[§], and Huxley[‖], by many zoologists *Chœropsis* is regarded as a species of *Hippopotamus*, and by some only as a variety of *Hippopotamus amphibius*[¶]. Thus, for example, Flower[**], a very high authority, does not consider the difference in the shape of the cranium and in the number of the incisor teeth in the lower jaw as warranting the establishment of the genus *Chœropsis*. The difference presented by the crania in the two kinds of hippopotamus Flower regards as similar to those "between the tiger and the smaller species of *Felis*, the gorilla and baboons and the smaller allied apes." In the judgment of the author, however, it may be at least questioned whether the differences existing between the smaller species of *Felis* do not justify separating them into distinct genera. On the other hand, although the gorilla has descended in all probability from some baboon-like form, zoologists do not as yet recognize these two apes as species of the same genus. The fact that *Hippopotamus amphibius*, syn. *Tetraprotodon*, has, according to Gaudry[††], exhibited in one instance unilateral hexaprotodontism, and *Chœropsis*, according to Flower[‡‡], in one instance unilateral tetraprotodontism, would influence but few palæontologists in regarding, like Lydekker[§§], *Hexaprotodon*, *Tetraprotodon*, and *Chœropsis* as merely species of one genus, *Hippopotamus*. *Hexaprotodon* and *Tetraprotodon*, with the incisor formula $\frac{3}{3}-\frac{3}{3}$ and $\frac{2}{2}-\frac{2}{2}$ respectively, are still considered either as subgenera, as they were originally by Falconer and

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* Proc. Acad. N. S. 1844, vol. ii. p. 14; Journ. A. N. S. vol. i. 1849, p. 231.

† Syst. Nat. ed. 12, vol. i. p. 10 (1766).

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[*] Proc. A. N. S. 1852, vol. vi. p. 52.

[†] Journ. A. N. S. ser. 2, vol. ii. 1853, p. 213.

[‡] 'Recherches sur l'anatomie de l'Hippopotame,' Paris, 1867, p. 202. Gratiolet, apparently ignorant of Leidy's description, named the Liberian hippopotamus *Ditomeodon*.

[§] 'Recherches sur les Mammifères,' Paris, 1868–1874, p. 43.

[‖] Huxley, 'Anatomy of Vertebrated Animals,' 1872, p. 319. At least, Huxley says, "The Hippopotamidæ are represented at present only by the genera *Hippopotamus* and *Chœropus*." "*Chœropus* has only two incisors in the lower jaw"—by *Chœropus* is, presumably, meant *Chœropsis*.

[¶] Carus, 'Zoologie,' 1868, p. 145.

[**] Proc. Zool. Soc. London, 1887, p. 612.

[††] Bull. Soc. Géologique, ser. 3, vol. iv. p. 504.

[‡‡] *Op. cit.*

[§§] 'Memoirs of the Geological Survey of India,' 1884–1886, vol. iii. p. 47.

Cautley[*], or as genera, as by the greatest of British palæontologists, the late Sir Richard Owen[†]. The latter view being accepted by the author, *Chœropsis*, with the incisor formula $\frac{2}{1}-\frac{2}{1}$, and differing in other respects far more from the living hippopotamus (*Tetraprotodon*) than the latter does from the extinct one (*Hexaprotodon*), should certainly be regarded as a genus distinct from *Hippopotamus*.

It appears to us that too much importance has been attached by Lydekker and Flower to the presence of an extra incisor tooth in the lower jaw of *Hippopotamus amphibius* and *Chœropsis* respectively, especially as it has only been noticed once in either case. We would rather regard the presence of such an incisor tooth as an individual peculiarity and as an instance of redundancy than of reversion. In view of what has already been urged by Leidy, Gratiolet, and Milne-Edwards in favour of distinguishing *Chœropsis* as a genus distinct from *Hippopotamus*, there is but little further to be added. It may be mentioned, however, in this connexion, that the brain of *Chœropsis* as described by Macalister[‡] differs very considerably from that of the adult hippopotamus dissected by Garrod[§] and of the young animal dissected by the author[‖], the differences between the two brains being essentially the same as those presented by the casts of the cranial cavities described and figured by Milne-Edwards. The above remarks are made on the occasion of the presentation to the Academy by Mr. W. E. Rothery, Consul of the Liberian Government, through Mr. Arthur E. Brown, of a fine skin and skeleton of the *Chœropsis liberiensis*. The value of this generous gift will be better appreciated when it is known that the only specimen of *Chœropsis liberiensis* ever exhibited abroad was the one that lived only five minutes after its arrival at the Zoological Garden of Dublin, and which constituted the subject of the dissection made of that animal by Macalister. So far as known to the author, with the exception of the skin presented to the Academy this evening there are but two others in collections—those referred to by Milne-Edwards and Flower. Our *Chœropsis* is 5 feet 3 inches in length and 2 feet 5 inches in height, the latter measurement being taken from the shoulder. The colour of the skin appears to have been originally of a bluish black, fainter in some parts than others, and presenting, therefore, a somewhat mottled appearance. The difference in colour from that of the *Chœropsis* described by Milne-Edwards, which is represented as of a reddish hue, may possibly have been due to the liquor in which the skin was preserved. It is more probable, however, that *Chœropsis* varies in colour. In other respects our specimen resembles that described and illustrated by Milne-Edwards.—*Proc. Acad. Nat. Sci. Philad.* 1893, pp. 185-187.

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[*] Falconer, 'Palæontological Memoirs,' vol. i., 1868, p. 140.

[†] 'Odontography,' 1840, p. 566.

[‡] Proc. Roy. Irish Acad. 2nd ser. vol. i., 1873, p. 494.

[§] Trans. Zool. Soc. Lond. 1880.

[‖] Proc. Acad. Nat. Sci. 1881, p. 126.

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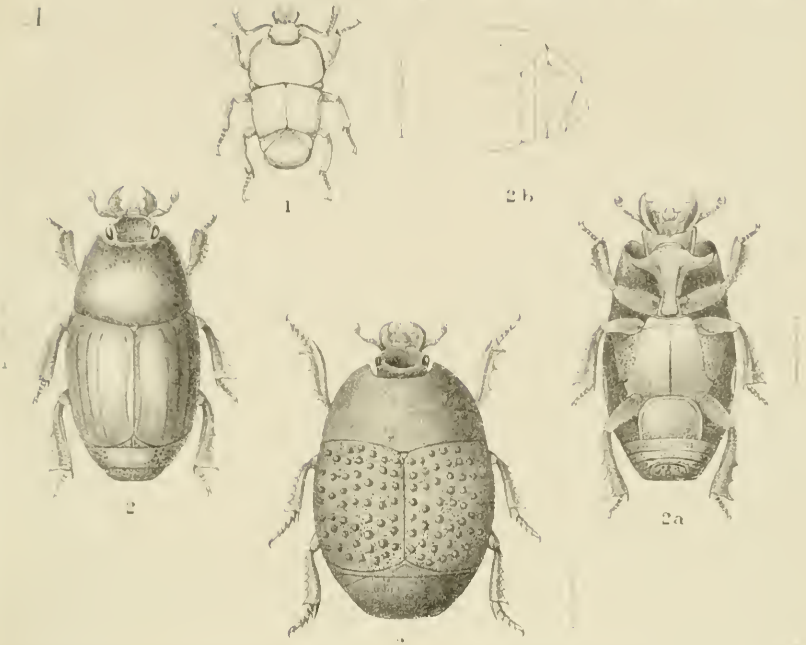

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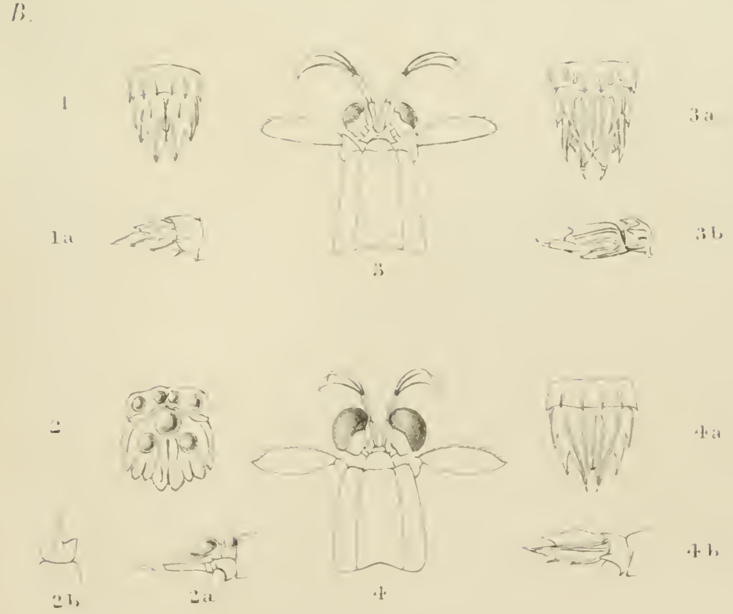

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